

WHAT IS CLAIMED IS:

1. A reluctance machine comprising a rotor having a plurality of rotor poles, a stator having a plurality of stator poles, at least one phase winding for exciting two or more of the poles and a priming winding to excite two or more of the poles.
2. A reluctance machine according to claim 1 wherein the priming winding is connectable to a priming power source separate from that used to excite the phase windings.
3. A reluctance machine according to claim 1 wherein the machine is a switched reluctance machine.
4. A reluctance machine according to claim 1 wherein the at least one phase winding is provided on the stator poles.
5. A reluctance machine according to claim 1 wherein the priming winding is provided on the stator.
6. A reluctance machine according to claim 5 wherein the priming winding extends along a longitudinal axis of the stator.
7. A reluctance machine according to claim 5 wherein the priming winding is of a gramme-ring type, wound around a back iron part of the stator.

8. A reluctance machine according to claim 5 wherein the priming winding is provided around at least one of the stator poles.
9. A reluctance machine according to claim 1 wherein the at least one phase winding is excitable by a DC link, the ratio of the voltage of the DC link to the supply voltage for the priming winding being greater than 3.
10. A reluctance machine according to claim 1 further comprising means for connecting the priming winding to a priming power source, the means for connecting comprising a switch, a chopper unit or a current controller.
11. A reluctance machine according to claim 1 wherein the priming winding and/or its associated priming power source, and/or associated connecting components, are rated for short-term use.
12. A method of starting a switched reluctance generator comprising a rotor having a plurality of rotor poles and a stator having a plurality of stator poles, at least one phase winding defining one or more phases, and at least one priming winding, the method comprising;
 - driving the rotor relative to the stator;
 - energizing the priming winding by forming an electrical connection between the priming winding and a source of electrical energy to excite two or more of the poles and to cause time-varying flux linkage in at least one of the phase windings; and

subsequently de-energizing the priming winding and energizing the phase winding(s) of the generator.

13. A method according to claim 12 wherein the switched reluctance generator is connected to a DC link and further comprising de-energizing the priming winding once the voltage of the DC link has reached a pre-determined value and subsequently energizing the phase winding(s) of the generator from the DC link.

14. A method according to claim 13 in which the DC link has a DC capacitor connected across the phase winding(s), the method further comprising:

charging the DC link capacitor by supplying current from the or each phase winding to the DC link capacitor and disconnecting the priming winding from the source once the voltage of the DC link capacitor has reached a pre-determined value.

15. A switched reluctance generator comprising a rotor having a plurality of rotor poles and a stator having a plurality of stator poles, at least one phase winding defining one or more phases, and at least one priming winding, the generator comprising;

means for driving the rotor relative to the stator;

means for energizing the priming winding by forming an electrical connection between the priming winding and a source of electrical energy to excite two or more of the poles and to cause time-varying flux linkage in at least one of the phase windings; and

means for subsequently de-energizing the priming winding and energizing the

phase winding(s) of the generator.

16. A switched reluctance generator according to claim 15 wherein the switched reluctance generator is connected to a DC link and further comprising means for de-energizing the priming winding once the voltage of the DC link has reached a pre-determined value and for subsequently energizing the phase winding(s) of the generator from the DC link.

17. A switched reluctance generator according to claim 16 wherein the DC link has a DC capacitor connected across the phase winding(s), the generator further comprising:

means for charging the DC link capacitor by supplying current from the or each phase winding to the DC link capacitor and for disconnecting the priming winding from the source once the voltage of the DC link capacitor has reached a pre-determined value.